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ABSTRACT

This report contains 51 one-page abstracts of innovative Illinois tech prep programs that integrate academic and vocational education. Each abstract includes the following: curriculum areas, grade level, types of students for whom the program is appropriate, materials needed, suggested resources, a contact person with address and telephone number, a short summary of the program, and an evaluation. Some of the programs profiled include the following: business and Spanish; preengineering internship; interdisciplinary studies, mathematics and vocational resource program, cooperative education and English; integration of computer education technology with academics; chemistry of technology and physics of technology; entrepreneurship program; technology and the environment; classroom activities for producing mailable copy; center for applied technology and instructional design; food science; fitness and nutritional analysis; writing across the occupational curriculum; biology and food science overlaps; advanced physics with autos; business academy; noise pollution; professional writing and cooperative vocational education; tech prep high school planning guide; recycling; publication project; community development; and how to research and pursue a career. (KC)

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CONNECTIONS

A Compendium Of Integration Ideas

ED 362 744

ILLINOIS TECH PREP INNOVATORS

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Office of Educational Research and Improvement
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1992 Compendium

Integrative Teaching Ideas From
Illinois Teachers

CE 064 836

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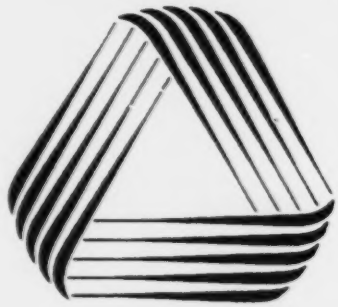

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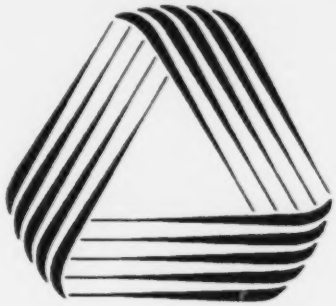

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Connections 2000

Connections 2000 is a program devoted to developing and implementing activities which lead to the further integration of academic and vocational curricula throughout the state of Illinois. In 1992, Connections 2000 awards were given to teachers and/or administrators who successfully developed activities or programs which enhanced curriculum integration. The Connections 2000 awards were given to recognize creative individuals through monetary awards and the publication and dissemination of this Connections "Compendium." Recipients of Connections 2000 awards have demonstrated how integrated teaching and program development ideas can lead to improved student learning. These Connections 2000 awards provide professional growth opportunities for teachers and administrators through sharing ideas and activities. Awards of $200 were presented to each group of faculty and administrators who developed and implemented these ideas.

Secondary faculty and administrators were eligible to apply for these awards through the Connections Project at Illinois State University funded by the Illinois State Board of Education. The Connections Project staff collaborated with the Illinois State Board of Education, Department of Adult, Vocational and Technical Education staff in sponsoring this important compendium of innovative ideas. A Connections 2000 committee was formed in August, 1991 composed of Connections Project staff and the Illinois State Board of Education. The committee reviewed all award proposals and selected the top fifty-one for inclusion in this compendium. The committee's gratitude is extended to all of those who applied.

Business and Spanish

Sylvia Staley/Mary Jo Keffer

Program Abstract:

Enabling students to apply their written and oral Spanish proficiency in specific vocational areas using modern technology, such as computers, calculators, and dictaphones, is the goal of the Innovative Business in Spanish program at Harlem High School in Loves Park. Students who complete the program will possess marketable skills that can be used in the local, state, national, or international market.

Evaluation:

Each student has the opportunity to demonstrate his/her written and oral proficiency in Spanish in a simulated business office, practicing common business procedures, and utilizing the Spanish language, which provides a unique and marketable twist to this business program. Students are given the opportunity to apply these skills via modern technology in the computer lab.

HHS

Curriculum Area:

Business Spanish.

Level of Implementation:

11-12.

Students:

Average

Materials included:

Course description for student course catalog.

Integration Resources:

Contact:

Sylvia Staley and Mary Jo Keffer
Harlem High School
9229 North Alpine Road
Loves Park, IL 61111
815-654-4511
Principal: Nelson Pyle

Industrial Technology

David Warthen

Program Abstract:

Using engineers from industry to expose students to the intricacies of the engineering profession provides a Pre-Engineering experience taught by professionals in a high-tech modern corporation. Providing a real experience to students who are interested in engineering as a career breaks down abstract concepts into practical hands-on experiences.

Evaluation:

Each area of exploration includes the application of mathematics, logic, chemistry, physics, and computer science. The application of scientific principles and concepts are reinforced through interaction with real engineers. David Warthen, project director, indicated that before the existence of this program, students didn't have the opportunity to explore engineering careers and acquire related skill; but after this program, students had a greater understanding of math, logic, chemistry, physics, and computer science.

LTHS

Curriculum Area:
Industrial Technology

Level of Implementation:
11-12

Students:
Above Average.

Materials included:

Instructional guidelines, outside resources student work sample,curriculum guide(s), assessment tool(s), lesson plans

Integration Resources:

The program has been observed by teachers, administrators, and engineers; pre-post testing and student evaluations; and the enrollment has doubled after the first year.

Contact:

David Warthen
Lockport Twp. High School
1333 E. Seventh Street
Lockport, IL 60441
815-838-7300
Principal: James Clark

All Students are Prepared! (ASAP)

Art, Business, English, Industrial Technology, Mathematics, Science, and Social Studies

Patricia S. Hunt/Pamela J. Venturi

WHS

Program Abstract:

Woodruff High School in Peoria has a huge integration program underway which provides students and faculty with a visibly integrated experience utilizing art, business, English, industrial technology, mathematics, science, and social studies in an applied/theoretical experiential learning environment. All areas of endeavor and exploration are included, promoting an appreciation of the interrelationships among the disciplines and their respective practices in the classroom as well as real world applications.

Evaluation:

The constant focus of this project is on the interdependence of the various disciplines included (art, business, English, industrial technology, mathematics, science, and social studies) due to the cross-referential presentations of research, design, development, production, and marketing of student-created projects utilizing multiple teaching/learning strategies such as cooperative learning which consciously avoid the outdated exclusivity of disciplines.

Participating departments consolidate their efforts to improve these scores, increase retention, and develop a life skills-based curriculum to promote exit employability in the 55% mobile, and 48% minority population of School District 150.

Curriculum Area:
Art, Business, English, Industrial Technology, Mathematics, Science, and Social Studies

Level of Implementation:
9-10, 11-12

Students:
Below Average, Average, Above Average, Special

Materials included:
Education

Integration Resources:
Multitudinous measurement vehicles, including observations, interviews, pre/post testing (individual areas), Joint Council of Economic Education contest, feasibility studies, cost analysis, post-marketing analysis, and, finally, development of a studies, cost analysis, post-marketing analysis.

Contact:

Patricia S. Hunt and Pamela J. Venturi
Woodruff High School
1800 N.E. Perry
Peoria, IL 61603
Principal: David Barnwell

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Mathematics

Mary Ebert

Program Abstract:

The Mathematics/Vocational Resource program at the Quincy AVTC utilizes trade specific practical applications to reinforce mathematical concepts. It was developed for the purpose of improving the mathematical skills of vocational students and providing resources in mathematics for vocational teachers.

Evaluation:

After student mathematical weaknesses were determined through various assessment devices, students worked with Mary Ebert, project director, in small groups one day each week during their vocational class. Math topics are always covered through the use of problems from their particular vocational area.

Mary indicated that the need for integration is important in order to help students understand the connection between their vocational trade and the math concepts needed to be successful in that trade. Due to the application approach to teaching, Mary hopes that student retention rate will improve.

QAVTC

Curriculum Area:
Mathematics/Vocational Resource Program

Level of Implementation:
11-12

Students:
Below Average, Average, Above Average, Special Ed.

Materials included:
Outside Resources, student work samples, assessment tool(s), weekly schedule

Integration Resources:
Integration Resources: A pre- and post-test will be administered to those students who have worked for more than three months in the program.

Contact:
Mary Ebert
Quincy Area Vocational Technical Center
219 Baldwin Drive
Quincy, IL 62301
217-224-3770
Principal: Gene Willimann

Cooperative Education and English

Janet E. Valuch

Program Abstract:

The Cooperative Education and English program uses cooperative learning techniques so that students in the Cooperative Education and English Departments of Homewood-Flossmoor High School develop a usable one-page resume which can be used for employment now and in the future.

Evaluation:

A series of lessons was developed to "bridge the gap" between instruction given by academic teachers and vocational teachers. Sharing materials covered in both curricula and meeting the needs of students with various learning styles in addition to an emphasis on cooperative learning techniques allows for creativity through the development of a practical resume.

Integrated curriculum applications from vocational to academics are shared on selected topics, thus reinforcing the connected curriculum.

HFHS

Curriculum Area:
Cooperative Education and English

Level of Implementation:
13-14

Students:
Average

Materials included:

Instructional guidelines, student work samples, curriculum guide(s), assessment tool(s), lesson plans, teacher workshops, and transparencies

Integration Resources:

Group processing (students' evaluation of the effectiveness of their groups at various points in the lesson). Students' responses to group evaluations of rough draft. Evaluation of final resume by student-peer groups. Evaluation of project with cooperating English teacher.

Contact:

Janet E. Valuch
Homewood-Flossmer
999 Kedzie Avenue
Flossmoor, IL 60422
Principal: Laura F. Murray

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Applied Academics

Sean McLaughlin

Program Abstract:

Calhoun High School is currently offering one of the most diverse applied academics curriculums in Illinois. Team members have sequenced courses of study that benefit all students regardless of career plans. Integrating academic and vocational subject matter in such a way as to increase relevance of academic concepts and target the tactile-kinesthetic learner, often neglected in traditional approaches.

Evaluation:

By sequencing a series of traditional and tech prep courses— including Principles of Technology, Applied Math, Applied Communications, Applied Health Occupations, and Applied Biology/Chemistry—students' needs are being met to a greater degree than ever before.

The needs of many students were not being met, and students who learned best through application were often not addressed or challenged in a traditional classroom setting. By increasing student awareness of technology, the first step in alleviating this problem has been taken.

CHS

Curriculum Area:
Applied Academics

Level of Implementation:
9-12

Students:
Average

Materials included:

Instructional guidelines, curriculum guide(s), outside resources, assessment tool(s), student work samples, teacher workshops

Integration Resources:

Integration Resources: Students are observed running experi ments, completing lab reports on word processors, and are tested for understanding after each sub unit.

Contact:

Sean McLaughlin
Calhoun High School
P. O. Box 387
Hardin, IL 62047
618-576-2229
Principal: Terry Strauch

All Students are Prepared! (ASAP)

Art, Business, English, Industrial Technology, Mathematics, Science, and Social Studies

Patricia S. Hunt/Pamela J. Venturi

Program Abstract:

Woodruff High School in Peoria has a huge integration program underway which provides students and faculty with a visibly integrated experience utilizing art, business, English, industrial technology, mathematics, science, and social studies in an applied/theoretical experiential learning environment. All areas of endeavor and exploration are included, promoting an appreciation of the interrelationships among the disciplines and their respective practices in the classroom as well as real world applications.

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The constant focus of this project is on the interdependence of the various disciplines included (art, business, English, industrial technology, mathematics, science, and social studies) due to the cross-referential presentations of research, design, development, production, and marketing of student-created projects utilizing multiple teaching/learning strategies such as cooperative learning which consciously avoid the outdated exclusivity of disciplines.

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Level of Implementation:
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Students:
Below Average, Average, Above Average, Special

Materials included:
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Integration Resources:
Multitudinous measurement vehicles, including observations, interviews, pre/post testing (individual areas), Joint Council of Economic Education contest, feasibility studies, cost analysis, post-marketing analysis, and, finally, development of a studies, cost analysis, post-marketing analysis.

Contact:

Patricia S. Hunt and Pamela J. Venturi
Woodruff High School
1800 N.E. Perry
Peoria, IL 61603
Principal: David Barnwell

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Mary Ebert

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Mary indicated that the need for integration is important in order to help students understand the connection between their vocational trade and the math concepts needed to be successful in that trade. Due to the application approach to teaching, Mary hopes that student retention rate will improve.

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Level of Implementation:
11-12

Students:
Below Average, Average, Above Average, Special Ed.

Materials included:
Outside Resources, student work samples, assessment tool(s), weekly schedule

Integration Resources:
Integration Resources: A pre- and post-test will be administered to those students who have worked for more than three months in the program.

Contact:
Mary Ebert
Quincy Area Vocational Technical Center
219 Baldwin Drive
Quincy, IL 62301
217-224-3770
Principal: Gene Willimann

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Janet E. Valuch

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Group processing (students' evaluation of the effectiveness of their groups at various points in the lesson). Students' responses to group evaluations of rough draft. Evaluation of final resume by student-peer groups. Evaluation of project with cooperating English teacher.

Contact:

Janet E. Valuch
Homewood-Flossmer
999 Kedzie Avenue
Flossmoor, IL 60422
Principal: Laura F. Murray

The Calhoun Tech Prep Connection

Applied Academics

Sean McLaughlin

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Calhoun High School is currently offering one of the most diverse applied academics curriculums in Illinois. Team members have sequenced courses of study that benefit all students regardless of career plans. Integrating academic and vocational subject matter in such a way as to increase relevance of academic concepts and target the tactile-kinesthetic learner, often neglected in traditional approaches.

Evaluation:

By sequencing a series of traditional and tech prep courses— including Principles of Technology, Applied Math, Applied Communications, Applied Health Occupations, and Applied Biology/Chemistry—students' needs are being met to a greater degree than ever before.

The needs of many students were not being met, and students who learned best through application were often not addressed or challenged in a traditional classroom setting. By increasing student awareness of technology, the first step in alleviating this problem has been taken.

CHS

Curriculum Area:
Applied Academics

Level of Implementation:
9-12

Students:
Average

Materials included:

Instructional guidelines, curriculum guide(s), outside resources, assessment tool(s), student work samples, teacher workshops

Integration Resources:

Integration Resources: Students are observed running experi ments, completing lab reports on word processors, and are tested for understanding after each sub unit.

Contact:
Sean McLaughlin
Calhoun High School
P. O. Box 387
Hardin, IL 62047
618-576-2229
Principal: Terry Strauch

Integration of Computer Education/Technology with Academics

Computer Education, Science, Math, and Social Studies

Patricia J. Fleming

MPHS

Program Abstract:

Providing an integration of technology and academics and forming strong foundations for students who will be employed in the next century was achieved at Morgan Park High School by developing a true merger between computer education, science, math, and social studies. Almost all students acquire competencies on the computer that carry over into the academic subjects. Patricia Fleming indicated that the integration of computers into chemistry enhances lab work because "wet" experiments are becoming obsolete. Students input conducted experiment results using word processing software.

Evaluation:

Merging academics with vocational education was viewed as essential because jobs at the turn of the century will demand training in technology, networks, and multi-media. As a work experience coordinator, Pat indicated that the program has reinforced knowledge so that students possess the characteristics needed for employment.

Curriculum Area:
Computer Education, Science, Math, and Social Studies

Level of Implementation:
9-10, 11-12

Students:
Below Average, Average, Above Average

Materials included:

Teacher workshops are presently underway. Teachers will use the IBM network. Lesson plans, and assessment instruments are forthcoming.

Integration Resources:

Comparative studies to increase attendance and achievement scores through analysis of pre-imposed evaluation instruments and final analysis instruments.

Contact:

Patricia J. Fleming
Morgan Park High School
1744 W. Pryor
Chicago, IL 60643
312-535-2550
Principal: Earl Bryant

Art, Computer, and Industrial Technology

Ray Skeen/Anne Becker

AWHS

Program Abstract:

Computer Graphics is designed to enlighten and enrich students in the areas of drafting, advertising, visual communication, art, and computers. Students experience abstract principles by completing such practical exercises as developing product advertisements which will attract positive consumer attention.

Evaluation:

Computer graphics merges the visual communication of art with the technical communication of industrial technology through practical integration exercises in printing, animation, drafting, etc.

This integration effort is considered important because the computer has become such a powerful tool for the industrial designer and the graphic artist in our society.

Curriculum Area:
Art, Computer, and Industrial Technology

Level of Implementation:
9-10, 11-12,

Students:
Below Average, Average, Above Average, Special Ed.

Materials included:

Industrial guidelines, curriculum guide(s), lesson plans, outside resources, assessment tool(s), and student work samples

Integration Resources:

The success of this project has been measured by student success in related college study, through with companies supporting the efforts, and interest shown by other high schools in the program.

Contact:
Ray Skeen/Anne Becker
AuroraWest High School
1201 W. New York Street
Aurora, IL 60507
708-844-4600
Principal: Robert Hawkins

Agricultural Education

Robin A. Harlan

Program Abstract:

The purpose of the Armstrong Aquaculture program is to further students' agricultural horizons, for urban students to study production management in a learning environment, and to give some students who don't normally take chemistry or physics a look at how those classes relate to the real world.

Evaluation:

The academic half of the program includes students' understanding of what is happening in the program, what changes have been made, and why. The vocational half of the program, on the other hand, includes students' understanding where and how to make a profit from the program by being an active participant in the program's management.

The Aquaculture program gives students a chance to leave the classroom and continue to learn. Monotonous study often causes students to become tired and bored quickly. With out-of-the-classroom study, students work toward gaining hands-on experience. Aquaculture farming gives students an alternative program of study besides the standard crops and livestock farming agriculture curriculum.

AHS

Curriculum Area:
Agricultural Education

Level of Implementation:
9-10, 11-12

Students:
Average, Above Average

Materials included:
Instructional guidelines, lesson plans, outside resources, assessment tool(s), student work samples, teacher workshops

Integration Resources:

The success was measured by the knowledge and understanding the students exhibited compared to what they knew and understood at the end of their participation in the program. Success was also measured in the students' ability to raise, care, and market fish.

Contact:

Robin A. Harlan
Armstrong High School
Box 37
Armstrong, Il 61812
217-569-2122
Principal: Don Stagen

Phys-Ma-Tech:
Physics Integrated with Math and Technology

Physics, Technology, and Mathematics

Susan Brennan/Donald Miner/Ray Skeen

Program Abstract:

At Aurora West, Phys-Ma-Tech is a two-hour course integrated in content and delivery, which addresses physics concepts, taught while not reducing rigor. By using technology labs designed to address physics concepts providing a hands-on approach for students and insight into industrial and technological applications, excellent results are achieved.

Evaluation:

Technology is infused into the physics curriculum using hands-on laboratory experiences involving industrial equipment, processes and materials, and field trips to area industries and businesses which relate real world technological applications with physics and mathematics. Teacher teams practice an interdisciplinary approach toward developing and delivering the physics, technology, and mathematics curriculum content.

At the inception of the project, the combination of physics, mathematics, and technology was a natural connection for a team effort by teachers from Aurora West. The goal was to get more students from the below average to above average range to sign up for physics. With fewer than 15% of high school students nation-wide taking physics, the team wanted to be part of an effort to combine physics, mathematics, and technology into a course which would entice more students to enroll in physics.

AWHS

Curriculum Area:
Technology, and Mathematics

Level of Implementation:
11-12

Students:
Average

Materials included:
Outside resources, student work samples, extensions of instructional materials

Integration Resources:

The results of the first year's project indicate students in the program learned physics as well as those in the control group. One should factor into this that the target population for the program students were from the "just below average" to "just above average" student who had not intended to take physics, while the control group were traditional college-bound students. A pre- and post-attitude test also indicated that the Phys-Ma-Tech group had increased appreciation for physics and technology education.

Contact:
Susan Brennan/Donald Miner/Ray Skeen
Aurora West High School
1201 W. New York Street
Aurora, IL 60507 708-844-4600
Principal: Robert Hawkins

Science and Technology Education

Robert Gauger

Program Abstract:

The Chem Tech and Physics Tech instructional model was designed to raise student achievement through parallel teaching strategies and applicative learning experiences that promote competencies in math and science. The program was designed around the belief that we are all born scientists, with an innate curiosity about the things around us, the materials that make up the world, and about other living things.

Evaluation:

Chem Tech and Physics Tech is an integration strategy that provides students with hands-on laboratory experiences that directly applies science theories and principles to applications of technology.

The instructional model brings teachers out of isolation and promotes professional exchange of ideas and teaching strategies. The students improve their problem solving abilities due to the high degree of cooperative learning activities.

OP/RFHS

Curriculum Area:
Science and Technology Education

Level of Implementation:
9-10, 11-12

Students:
Average, Above Average

Materials included:
Teacher workshops

Integration Resources:
One positive indicator or the success of Chem Tech and Physics Tech is the enrollment pattern over the last 4 years: 1988-89 = 35 (pilot), 1989-90 = 100, 1990-91 = 190, and 1991-92 = 235.

Contact:

Robert Gauger
Oak Park & River Forest
201 N. Scoville
Oak Park, IL 60302
708-383-0700
Principal: Dr. Donald Offermann

Agriculture, Science, and Mathematics

Mary Aten/Marcia Clark/Pete Egleton

Program Abstract:

The purpose of the "Growing Together" program was to integrate fourth graders with secondary students involved in the FFA program in order to learn about agriculture and use problem solving procedures needed in the field of agriculture. Both fourth grade and secondary agriculture students receive an integrated learning experience in the areas of agriculture, science, and mathematics. While jointly building and maintaining a portable greenhouse, students till, prepare, and plant a garden on the Astoria campus. Preliminary results indicate great excitement within both groups.

Evaluation:

Mathematic and scientific skills of estimation, calculation, measurement, and economics are by integrated into an agricultural learning experience reinforced utilizing the big brother/sister concept.

The integration effort developed interest in the high school agriculture program, gardening as a hobby, farming, or other agricultural-related occupations as a career.

ACUSD #1

Curriculum Area:
Agriculture, Science, and Mathematics

Level of Implementation:
9-10, 11-12, 4th grade

Students:
Below Average, Average, Above Average, Special Ed.

Materials included:
Instructional guidelines, lesson plans, brochure distributed at I.S.A.B. Rural and Small School Fair

Integration Resources:
Student enthusiasm by both grade and high school students. Increased parent and community interest in the annual "Ag Day."

Contact:
Mary Aten/Marcia Clark/Pete Egleton
Astoria CUSD #1
P.O. Box 487
N. Jefferson Street
Astoria, IL 61501
Principal: Marti Griffin

Entrepreneurship Program**The Business Center**

Business Plan Software/Metallurgical Science/Horticultural Science

Dorothy R. Appiah/Fred Majors

Program Abstract:

The Business Center in conjunction with an entrepreneurial concept shows students at Englewood High School that there are career alternatives other than seeking employment in corporate America. The program fosters critical thinking skills and personal time management techniques by utilizing business planning software, horticulture science, and metallurgical science.

Evaluation:

The Business Center, an entrepreneurial concept, integrates the following vocational and academic subjects: Metallurgical science with math, horticultural science with business technology, business English, and software applications.

EHS

Curriculum Area:
Business Plan Software/Metallurgical Science/Horticultural Science

Level of Implementation:
11-12

Students:
Average

Materials included:

Outside resources, audiovisual material/ computer software, teacher workshops. Resources were already compiled by various agencies.

Integration Resources:

The students are learning valuable business skills that enhance mastery of math and grammar skills. Additionally, students are asking to become part of The Business Center.

Contact:

Dorothy R. Appiah/Fred Majors
Englewood High School
6201 S. Stewart Avenue
Chicago, IL 60607
Principal: Warner B. Birts

Science 1A

Environmental Education

Michael T. Maher

Program Abstract:

Students who complete the Technology and the Environment program at the Fox Valley Career Center will have completed a series of activities developed to analyze automotive engine efficiency andthermal insulation cell efficiency. Gas combustion analysis of internal combustion engines, automotive, truck, motorcycle, and aircraft is accomplished by incorporating real world testing and measurement of commonly utilized technology.

Evaluation:

The program integrates state of the art gas analyzers utilized in automotive technology into a classroom environmental science application, exploring the limits of applied commercial technology and challenging students to design and construct a thermal cell that can resist heat rays.

Global learning is realized through enhanced perception and understanding measured by increased hands on experience.

FVCC

Curriculum Area:
Environmental Science

Level of Implementation:
9-10

Students:
Below Average, Average

Materials included:
Curriculum guide

Integration Resources:
Student interest, heightened discussion of topics. Students and parents bringing in personal vehicles, implements for testing, evaluation, and discussion.

Contact:
Michael T. Maher
Fox Valley Career Center
47W326 Keslinger Road
Maple Park, IL 60151
708-365-5113
Principal: Kathleen J.D. Watkins

Classroom Activities for Producing Mailable Copy

Business Office Procedures

Donna Bigley

Program Abstract:

Producing mailable copy should be a goal of speedwriting and/or office procedures classes; therefore, activities were implemented to achieve this goal at Rushville High School. Students utilize skills practiced in the integrated setting to produce quality mailable copy.

Evaluation:

English skills (grammar, punctuation, and communication skills) are integrated into the speedwriting and office procedures classes.

Donna Bigley believes that for the speedwriting/office procedures student to succeed, the student must have increased knowledge of English, math, and communication skills. With these skills, mailable copy is not only attainable but probable.

RHS

Curriculum Area:
Business—Office Procedures

Level of Implementation:
11-12

Students:
Average

Materials included:
Attached list of classroom activities

Integration Resources:
The success of these activities can be measured by the work completed by the students. Semester tests include sections on English skills and business procedures.

Contact:

Donna Bigley
Rushville High School
730 North Congress
Rushville, IL 62681
217-322-4316
Principal: John F. Bambrick

Center for Applied Technology/Instructional Design

Interdisciplinary/Technology

Linda J. Babl

Program Abstract:

The Interdisciplinary Technology program at Wheeling High School aims at an applied interdisciplinary approach to learning,incorporating state-of-the-art equipment, computers, and students. The program explores exciting and diverse technologies, such as hologram entry, flight simulation, lasers, fiber optics, robotics, and 31 other state-of-the-art technologies. Students use these experiences to know, apply, evaluate, and transfer sets of abilities.

Evaluation:

Based on an outcomes model of instruction, all students in the program are required to present portfolios demonstrating understanding and the application of science, communication, and numeracy as well as problem solving and creativity.

Linda Babl indicated that the bottom line is that the real world does not ask us to read, then write, then add, then solve problems and on and on. There must be a connectedness to learning if we expect to address life-long learning and retention of global importance and live in a society in which all individuals contribute expertise for the common good.

WHS

Curriculum Area:
Interdisciplinary/Technology

Level of Implementation:
9-10

Students:
Below Average, Average, Above Average, Special Ed

Materials included:

Materials/Facilities: Instructional guidelines, curriculum guide, lesson plans, samples of above

Integration Resources:

Authentic assessments of this project involves observation, interview, and post test, as well as artifact and portfolio presentations measure this project.

Contact:
Linda J. Babl
Wheeling High School
900 S. Elmhust Road
Wheeling, IL 60090
708-537-6500
Principal: Elizabeth Ennis

Tilden Voc-Tech/Academic Model

Chemistry, Gifted Education, Critical Thinking

Joyce E. Oatman

Program Abstract:

By integrating vocational technical preparation and academic skills in the Tilden classrooms, vocational students have become more competitive, qualified, and competent for the market place. Combining chemistry, gifted education, and the development of critical thinking provides students with opportunity to receive a more complete, well-rounded education, allowing students to more adequately apply learning to workplace settings.

Evaluation:

The entire Tilden staff improved academic skills through staff development. The staff learned to design a curriculum that strengthens skills across major academic disciplines. English,mathematics, science, social studies, and industrial technology teachers worked together after school to make sure that the skills needed in academic and vocational areas were incorporated into the curriculum. The initial effort was undertaken due to the low level of standardized testing scores throughout the school. Additionally, the competency level of the Tilden vocational graduates did not meet the standards set by the community. The atmosphere of collegiability among voc-tech and academic teachers with respect to planning curriculum has increased dramatically due to theproject.

THS

Curriculum Area:
Chemistry, Gifted Education, Critical Thinking

Level of Implementation:
9-10

Students:
Below Average

Materials included:
Instructional guidelines, outside resources, student work samples, curriculum guides, assessment tools, lesson plans, bibliography, teacher workshops, and materials for peer coaching.

Integration Resources:
(1)The number of teachers completing the staff development program. (2)The number of students completing 4-year voc-tech programs qualified to continue post secondary work or enter their chosen vocations. (3) Increases in the scores.

Contact:

Joyce E. Oatman
Tilden High School
4747 South Union Avenue
Chicago, IL 60609
312-534-8600
Principal: Dr. Hazel B. Steward

Jones Finance Academy

Accounting and World of Finance Plus

Cozette Buckney/ Annie Miller/Diana L. Robinson

Program Abstract:

The Jones Accounting and World of Finance program was developed to prepare 11th and 12th grade students for careers in the financial services industry and for a lifetime of learning. The program introduces students to the wide array of Chicago's world class financial community, including studies in accounting, banking, securities and commodities, exchanges, brokerage, insurance, and real estate. Students who complete the program are prepared for a variety of entry-level positions throughout the financial services industry; however, they are strongly encouraged to further their education by pursuing a college degree in business studies.

Evaluation:

The innovative program is the first in the nation to combine two vocationally oriented education models (the Tech Prep and the Academy of Finance models of the National Academy Foundation). Jones Metropolitan High School has the only program like this in the Chicago area. The monthly Jones Breakfast Forum—with cooperative business partners, students, and staff—makes the integration complete.

Integrating academic and vocational curricula was vital because it directly correlated with the mission of the school and the preparation of students for the world of work, as well as academic proficiency, thus giving students the option of continuing their education in college.

JMHSBC

Curriculum Area:

Accounting and World of Finance plus

Level of Implementation:

11-12

Students:

Average

Materials included:

Materials/Facilities: Instructional guidelines, outside resources, and teacher workshops.

Integration Resources:

The success of the project is measured by the number of students who: are on the honor roll, have perfect attendance, are successfully employed, are seeking higher education, and have a very positive outlook on their future in financial services.

Contact:

Cozette Buckney, Principal
Annie Miller/Ms. Diana L. Robinson
Jones Metropolitan High School of Business & Commerce
606 South State Street
Chicago, Illinois 60605
312-534-8600

Industrial Education

Dennis F. Koester

Program Abstract:

The Automated Systems program at Teutoplis High School builds students' competence in mathematics, science, and communication through a sequential course of "hands-on" applied sciences and arts. Students become thinkers, team builders, and act as teachers themselves in this innovative program. By using automated systems as the connection, students bridge and reinforce the concepts learned in mathematics, science, and communications. Teacher and student motivation has continued to escalate as the program continues, and many students are for the first time developing a clear understanding of the connectivity between school and work.

Evaluation:

The program provides technical preparation in engineering, technology, and applied science. Rendering from the abstract to the real, and correlating transferable skills from general education to vocational education are valuable aspects of the program. Social skills, critical thinking skills, and problem solving skills needed for employment are a vital component throughout the curriculum.

The program meets the academic needs and post educational endeavors of all students regardless of the academic program.

THS

Curriculum Area:
Industrial Technology

Level of Implementation:
11-12

Students:
Below Average, Average, Above Average

Materials included:

Instructional guidelines, curriculum guides, lesson plans, outside resources, assessment tools, student work samples, audiovisual material, and teacher workshops.

Integration Resources:

Integration Resources: Student motivation in class. ACT scores and other post-evaluation tests. Interviews from returning students. Peer satisfaction!

Contact:

Dennis F. Koester
Teutopolis High
Rt. 40 West, Box 700
Teutopolis, IL 62467
217-857-3139
Principal: Robert L. Shanks

Agriculture/Horticulture

Daniel Ginter

Program Abstract:

Progressively exploring the propagation of aquatic species for human consumption using an intensive aquaculture water reuse system allows students at Byron High School unique opportunities in agriculture. The program has generated high student interest and motivation by incorporating academic content (science and mathematics) into an innovative hands-on aquaculture program. One student commented "I didn't stay home from school today just because I wanted to see the fish"—thus accentuating the positive effect the program had on student motivation.

Evaluation:

Through the propagation of aquatic species, students are exposed to science concepts such as environmental factors, water chemistry (alkalinity, nitrite nitrogen, dissolved oxygen, PH, ammonia nitrogen), bacterial growth, disease and disease prevention, as well as mathematics (weights and measures), genetics, geography, history.

High levels of interest by students was shown when Daniel Ginter interviewed them prior to beginning this program. Curriculumdevelopment was vital for the Agriculture program and was undertaken in order to incorporate more academic subjects into an interesting new agriculture-oriented venture.

BHS

Curriculum Area:

Agriculture/Horticulture

Level of Implementation:

9-10, 11-12

Students:

Below Average, Average, Above Average

Materials included:

Materials/Facilities: Curriculume are being developed to not only cover aquaculture, but to incorporate other subject matter classes K-12. This isco-sponsored by the school district's Edutech Committee.

Integration Resources:

Integration Resources: Lower level/at-risk students became interested in learning.

Contact:

Daniel Ginter
Byron High School
P.O. Box 911, Tower Road
Byron, Illinois 61010
815-234-5491
Principal: Gary Hassler

Foods, Chemistry, Biology

Phyllis Krame/Branson Lawrence

Program Abstract:

Teaching chemistry and biology principles through the use of food and nutrition has proven to be a great success for Aurora West High School. The infusion of science principles into the food and nutrition program introduces these concepts in a natural and vital manner. Students use handout and worksheet information to explore topics such as the nutrient needs of humans, serving sizes, and health problems associated with poor eating habits.

Evaluation:

Science and home economics teachers work together using scientific methods to direct laboratory experiments involving food. Students are able to use scientific principles in the preparation of food and designing nutrition meal plans.

Many average and below average students were afraid of science and avoided subjects like chemistry and biology. The Food Science course allowed students to learn a core of knowledge in chemistry and biology in a nonthreatening surrounding.

AWHS

Curriculum Area:
Foods, Chemistry, Biology

Level of Implementation:
11-12

Students:
Below Average

Materials included:

Instructional Guidelines and Assessment Tools.

Integration Resources:

Integration Resources: Success of the program has been measured by testing and student evaluations of the program.

Contact:

Phyllis Kramer
Branson Lawrence
Aurora West High
1201 W. New York
Aurora, IL 60506
708-844-4600
Principal: Bob Hawkins

Home Economics & Physical Education

Linda Dishman/Carrie Cox

Program Abstract:

The Fitness and Nutritional program is an individualized interdisciplinary course that teaches a holistic approach to wellness. Through innovative and unique curricular approaches, the physical fitness and nutrition program incorporates nutrition information, food analysis by computer, cholesterol, and body composition testing into a wide variety of physical fitness and academic activities. The course is co-instructed by faculty from each department, utilizing both psychomotor and cognitive based cur riculum and evaluation.

Evaluation:

The physical education and home economics teacher team teach this class in a two-period block of time. Both are actively participating and even eat lunch with the students as part of the nutrition segment.

Students see the relationship between healthful eating/food preparation and physical exercise by exploring topics such as risk analysis stress management, exercise and food choices, making healthy choices, and healthy eating patterns.

VJAHS

Curriculum Area:

Home Economics and Physical Education

Level of Implementation:

9-12

Students:

Below Average, Average, Above Average

Materials included:

Outside resources, student work samples, curriculum guides, teacher workshops.

Integration Resources:

Increased scores when students analyzed their diets by computer. Students completed pretests on eating habits/physical fitness at the beginning of the semester and post tests upon completion of the program.

Contact:

Linda Dishman
Carrie Cox
Victor J. Andrew High School
9001 W. 171st Street
Tinley Park, IL 60477
708-532-7300
Principal: Mrs. Arlene See

Writing Across the Occupational Curriculum

Business, Accounting, & Office Careers

John Drea/Michael Terry

Program Abstract:

Any students at John Wood Community College who need help with writing problems may now stop in at the new writing assistance center. The purpose of the center is to improve the written communication skills of students in selected occupational programs to a level compatible with the needs of area employers. By using self-directed, computer based spell checkers, vocabulary and style checkers, students find just about every aid they will need to become better writers.

Evaluation:

Students in selected occupational programs develop improved written communication skills by completing more writing assign ments in occupational classes. A writing assistance center was created and equipped with 20 microcomputers in order to help students with writing problems. The staff at the center works to encourage occupational students to write more.

The primary force behind the integration effort was the 1989 Basic Skills Survey which indicated a need to upgrade the written communication skills of all occupational students.

JWCC

Curriculum Area:
Business, Accounting, & Office Careers

Level of Implementation:

13, 14

Students:
Below average, average, above average

Materials included:

Assessment tools and faculty information sheets.

Integration Resources:

Student success is measured by first collecting writing samples from students at the beginning of a semester. Students complete writing activities in the selected occupational classes and receive assistance in the Writing Assistance Center. A writing sample is again collected at the end of the semester for comparison purposes.
John Drea

Contact:

Michael Terry
John Wood Community College
150 South 48th St.
Quincy, IL 62301
217-224-6500
Plan of Instruction: Veldon Law

Biology/Food Science

Mark Collins/Carla Nilson/Deborah Pass

Program Abstract:

Directing students in an experimental approach toward understanding the application of basic scientific principles to food preparation and nutrition provide students at Herring High School with intergration activities that are relevant to the real world. The Biology/Food Science project at Herrin High School explores the production, processing, preparation, evaluation, and utilization of food. The program is based on many areas of science such as chemistry, biology, physics, and psychology. By using scientific methods in laboratory experiments students not only understand food, but science concepts and a variety of applications to everyday life.

Evaluation:

The Science/Home Economics food science course is taught in a hands-on experimental discovery method. The science and home economics department are exchanging classes to present lessons in their fields of expertise and are working toward additional team teaching activities for the future.

Students see how vocational and academic disciplines interact. Vocational programs help the academic students understand how science is used in real life situations and the academic programs provide concepts which reinforce voacational applications.

HHS

Curriculum Area:
Biology/Food Science

Level of Implementation:
9-10

Students:
Average

Materials included:
Outside resources, curriculum guides, lesson plans, and teacher workshops.

Integration Resources:
The success of the project was measured by student enthusiasm and participation in discussion. Observa tion, therefore, was the main criteria for the success of the project.

Contact:
Mark Collins/Carla Nilson/Deborah Pass
Herrin High School
700 North 10th Street
Herrin, IL 62948
618-942-6606
Principal: Edwin Tresnak

Project Hawk - Engineering for High School Students

Computer Ed/Engineering /Math/Science

Lynn St. James/Arthur Nachowitz

Program Abstract:

Project Hawk focuses on the connections between various disciplines and real world problem solving applications while offering participating students insight into engineering. As a collegelevel interactive/instructional television course, Project Hawk offers pre-engineering to high school students at their local school site. By using the latest state-of-the-art instructional materials and equipment students study science and mathematics by relating academic concepts to engineering problems.

Evaluation:

Students utilize specific software, nouvelle computers and interactive television to solve scientific, mathematics, word processing, and engineering problems. The program format facilitates the application of knowledge to solve proposed problems.

As a member of the Coalition of Essential Schools, Lindblom is restructuring the school and curriculum toward interdisciplinary, cooperative learning, team teaching and applied learning techniques. The IITH Program models each of those concepts and improves student performance.

LTHS

Curriculum Area:
Computer Ed/Engineering/Math/Science

Level of Implementation:
11-12

Students:
Above Average

Materials included:
Student work samples

Integration Resources:
Performance on case studies; observation; project completion reports.

Contact:
Lynn St. James/Arthur Nachowitz
Lindblom Technical
6130 S. Wolcott
Chicago, IL 60636
312-535-9300
Lynn St. James

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Mathematics/Business Education

Sharon Poppleton

Program Abstract:

The Computers and Applied Math program was developed at Glenbard West High School to present math using a slightly different approach. The program was designed for those students who have had a difficult time understanding math concepts and at the same time relate the use of those math concepts to the business world and real life experiences by using the personal computer.

Evaluation:

Computers and Applied Math provides avenues toward integrating math and business education on a daily basis. Math concepts are presented through the use of a workbook that allows each student to manage a band and use the math necessary to succeed in this role. Then those same concepts are transferred to the personal computer and the student learns how the computer is used in the real world to accomplish those same tasks learned in the class room.

Previous to this integration effort two courses (Applied Math and Introduction to Computers) were addressing similar subject areas and not necessarily meeting with great success. Joining the two courses brought both math and computers into a new light and a different environment for learning. A more hands-on, real life approach is utilized allowing students to relate content more effectively than they did in the previous two courses.

GWHS

Curriculum Area:
Mathematics/Business Education

Level of Implementation:
9-10

Students:
Below Average

Materials included:
Materials/Facilities: Instructional guidelines, student work samples, curriculum guides, assessment tools, and lesson plans.

Integration Resources:
The success of this project has been measured through testing, observation and comparison of past students who followed the old curriculum with those participating in Computers and Applied Math program.

Contact:
Sharon Poppleton
Glenbard West
670 Crescent Blvd.
Glen Ellyn, IL 60137
708-469-8600
Principal: Susan Bridge

Keyboarding 1 and 2

Mary Ann Mayes

Program Abstract:

Teaching keyboarding to students of varying abilities while reinforcing other academic skills and attempting to develop higher critical thinking skills is the purpose for which the intergrated curriculum for Keyboarding program was developed. The program focuses on the connections between disciplines using lesson plans of a practical nature.

Evaluation:

By developing individual lesson plans, the Intergrated Curriculum for Keyboarding Program integrates the academic and vocational curricula. Providing lesson plans in Keyboarding which include math, language arts, reading skills, decision making skills, listening and following directions skills, and higher critical thinking skills allows students of varying abilities to reinforce academic skills while studying practical subjects.

Making students more "employable" is the binding agent for the program. The answer lies in the student's ablity to apply the information learned in academic classes to practical, life-skills taught in vocational education classes. Students see the everyday, "job-getting" need for language arts, math, etc., and performing better in academic classes as well.

ESLSHS

Curriculum Area:
Keyboarding 1 and 2

Level of Implementation:
11-12

Students:
Below Average and Average

Materials included:
Instructional guidelines and lesson plans.

Integration Resources:
Testing, teacher observations, and student reactions.

Contact:
Mary Ann Mayes/Shirley Holman
East St. Louis Sr. High
4901 State St.
East St. Louis, IL 62201
618-583-8400
Principal: Samuel Morgan

Connections

Ronald L. Williams/Michael Fodor

Program Abstract:

Helping intelligent (but sheltered) advanced physics students interact with auto students exchange knowledge concerning the theory and application of auto physics and technologies was the impetus for starting the Advanced Physics with auto program. By linking the theory of the engineer and the practical results of the technician, students explore topics such as: friction, sound, fluids, and rotation through examining and trouble shooting the basic systems of the automobile. The automobile provides real world applications for many of the previoulsy complex physics problems.

Evaluation:

The program was a great success in so far as the auto students learned the types of engineering principles were involved and the physics students learning that theory has its problems when put into practical use. The program links the two "worlds" together and shows their interdependence and develops an appreciation for studying both curricular areas.

Ron Williams suggested that students need to first gain appreciation for the great advances science and technology brings to their lives. Then, they may be inspired to further improve their world and the quality of their lives through further study. Test score improvement is sure to follow.

SHS

Curriculum Area:
Advanced Physics with Autos

Level of Implementation:
9-12

Students:
Average and Above Average

Materials included:
Instructional guidelines and lesson plans.

Integration Resources:
Discussion following my three days of instruction proved beneficial and provided further ideas for improvement and future goals.

Contact:
Ronald L. Williams/Michael Fodor
Schaumburg High School
1100 W. Schaumburg Road
Schaumburg, IL 60194
708-882-5200
Principal: Jack Gaza

Business

Robert Meiss

PHS

Program Abstract:

Providing students with skills and attitudes in the areas of accounting, clerical, secretarial and marketing, sufficient for them to obtain entry level positions in the local labor market upon graduation from high school are some of the high goals set at the Peoria High School Business Academy. By incorporating math and English content into the business curriculum, students gain an exposure to the skills and concepts used in the business world.

Curriculum Area:
Business

Level of Implementation:
10-11

Students:
Average

Materials included:
None

Evaluation:

Math, English and business courses are taught in the Business Academy. These subject matters are integrated into the subject matter.

The Business Academy was developed as a response to local employer demands for better prepared students. The integration of subject matter is viewed as a method of lending greater relevance to academic subject matter. Students are shown academic skills and are given practical knowledge how they are applied in the workplace.

Integration Resources:

The ultimate success of the program is measured by the employment of students after graduation. Interim indicators of success are attendance, grades, attitude changes and business skill development.

Contact:

Robert Meiss
Peoria High School
1615 N. North St.
Peoria IL 61604
(309)672-6630
Principal: Richard Greene

Business Ed/Computer with Journalism, Science, Social Science, Interdisciplinary Newspaper Project

Sheila Wahe/Janel Bihn

Program Abstract:

The interdisciplinary newspaper project has a twofold purpose: first, the students receive credit in several disciplines by completing one assignment, and second, the teachers work cooperatively to meet the current and future needs of students.

Evaluation:

Students are assigned to research and write three newspaper articles from topics suggested by teachers. These topics range in content and cover a variety of academic areas. Students create their articles using AppleWorks on Apple IIc computers. They then learn to transfer them to the Macintosh and MicroSoft Works. Students learn the basic elements of PageMaker to create a masthead for their own newspapers and place their articles on the page, correct them, and print them for credit in at least three classes.

The over-riding goal of this project was to give students a change of pace from the normal daily assignment routine and to let them see that all academic areas are important and tie together. The students are highly motivated by using the computer, but the participation by other staff members is essential.

RIHS

Curriculum Area:

Business Ed/Computer with Journalism, Science, Social Science, Health and P.E.

Level of Implementation:

9-10 and 11-12

Students:

Below Average and Average

Materials included:

Teachers who participated, their disciplines, and suggested topics.

Integration Resources:

Success will be measured by the comments received from the students as well as feedback from the other teachers who agreed to participate. Students will receive a major grade in computer class for this project and will be taking copies of their newspapers to other teachers for credit.

Contact:

Sheila Wahe/Janel Bihn
Rock Island High School
1400-25th Avenue
Rock Island, IL 61201
(309)793-5950
Principal: Duane Bonsall

Noise Pollution - (P.E.R.F.E.C.T.)

Science, Math, Business English, Industrial Technology

Randy Simmons/Roger Hoerr/Gina Simpson/
Patti Simmons/Bob Suhr

Program Abstract:

The Noise Pollution Project at Peoria Manual High School was implemented in order to help develop a clear understanding of the cross-relationship of noise pollution to related fields in science, math, business, and industrial technology.

Evaluation:

By "adopting" a hands-on-approach to developing an understanding of noise pollution, the staff at Peoria Manual took a huge leap where most educators are afraid to go! We, sharing ideas, materials, thoughts, and yes, students!

PMHS

Curriculum Area:

Science, Math, Business English, Industrial Technology

Level of Implementation:

9-10 and 11-12

Students:

Below Average, Average and Above Average

Materials included:

Outside Resources, Audiovisual Materials, Teacher Workshops, and Us as Professionals!

Integration Resources:

Students were tested after exchanging classes, which turned out very positive.

Contact:

Randy Simmons/Roger Hoerr/Gina Simpson/Patti Simmons/Bob Suhr
Peoria Manual
811 S.W. Griswold
Peoria IL
Principal: Eric Johnson

PHYS-MA-TECH

Physics - Math - Technology

Patrick A. Crowns/Jerry L. Allen

Program Abstract:

Intergrating Physics and Math content through technological applications, as well as developing interdisciplinary delivery models, has led to the development of an innovative program called PHY-MA-TECH. The PHYS-MA-TECH program at Grayslake High School identifies technological application in various industrial settings that help demonstrate physics concepts while providing hands-on experience for students.

Evaluation:

Phys-Ma-Tech uses hands-on laboratory experience which involves industrial equipment, processes and materials, and field experiences related to technological application, and the interdisciplinary approach to content development and delivery.

This curriculum development was undertaken to improve physics instruction by integrating technology and encouraging the enrollment of students who do not normally take physics. Phys-Ma-Techprovides a vehicle to entice these students into integrated subject areas which are viewed by industry as important for employment.

GHS

Curriculum Area:

Physics - Math - Technology

Level of Implementation:

9-12

Students:

Average

Materials included:

Instructional guidelines, curriculum guides, outside resources, assessment tools, student work samples, bibliography.

Integration Resources:

Students were given pre/post tests for each unit, anda pretest before coursework began and a post-test after the course was finished. Daily observations, and interviews by Northern Illinois University of parents, teachers, and students were conducted. Evaluation forms were completed by students and teachers on field-tested activities. Results were used to facilitate module rewrites.

Contact:

Patrick A. Crowns/Jerry L. Allen
Grayslake High School
400 N. Lake Street
Grayslake, IL 60030
708-223-8621
Principal: Elizabeth Erickson McDonald

Food Science

Home Economics/Generates Science Credit

Cheryl Gansauer/Edythe Strater/Doris Tozzi

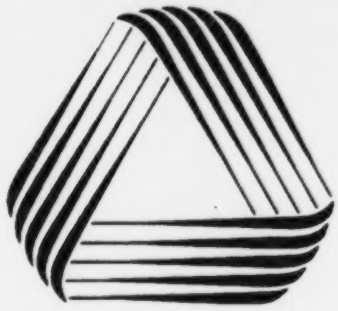
Program Abstract:

The Thornton High School Food Science program is a course designed to assist students in developing an understanding of how to apply basic scientific principles to food preparation and the nutritional consequences of preparation procedures. Through theutilization of demonstrations and laboratory experiments, students begin to develop an understanding of how preparation procedures affect the nutrition content of foods. Applying this knowledge through preparation of products or solving scientific nutritionally related problems is the powerful hidden objective.

Evaluation:

The Food Science program was designed using the State and district science learner outcomes and applying those outcomes to the principles of food preparation.

At the time that the course was developed, students were not succeeding in science and could not relate science to their every-day experiences. By presenting science to students in a practical, applied approach, science becomes practical and relevant.



THS

Curriculum Area:
Home Economics Science

Level of Implementation:
9-12

Students:
Below Average, Average, Above Average

Materials included:

Instructional guidelines, curriculum guides, lesson plans, outside resources, assessment tools, bibliography, student work samples, and teacher workshops.

Integration Resources:

Pre/Post Tests - Student enrollment has increased and remained stable over the last 5 years. Observations from professionals. Success of many individual students. Requests for materials/presentations.

Contact:

Cheryl Gansauer/Edythe Strater/
Doris Tozzi
151st & Broadway
Harvey, IL 60426
708-596-1000
Principals: JosephJames/Barbara Palmer

Physics (Integrated)

Science & Industrial Technology

Lou Komer/David Verdeyen

Program Abstract:

The Physics Intergrated program at Alan B. Shepard High School is used to enhance and improve secondary level physics. The improved physics course includes mathematics inherent to the science content and the technological applications which are a result of using scientific and mathematical principles. By integrating the concepts from each content area, students may experiment with practical applications of abstract concepts.

Evaluation:

A deficiency in the educational system puts students into science, mathematics, and technology courses each independent of the other. Since contemporary students live in a technological society, emphasis in this program has been placed on integrating experiences through content and delivery. This interdisciplinary approach treats the disciplines as equal and presents them as a team.

In a highly technological society, it is imperative that students obtain strong foundations in the areas of science, mathematics, and technology if they are to become future researchers, engineers, scientists, technologists, and educators. This course will provide an improved, enhanced, and more relevant physics curriculum.

ABSHS

Curriculum Area:
Science & Industrial Technology

Level of Implementation:
11-12

Students:
Average

Materials included:
Instructional guidelines, curriculum guides, assessment tools, lesson plans, lab experiments, inservice video tape.

Integration Resources:
Measurement was completed by using a pre/post test process, interviews with students, teachers, administrators. Results provided positive evidence that integration is well worth continuing.

Contact:
Lou Komer/David Verdeyen
Alan B. Shepard High School
13049 S. Ridgeland Avenue
Palos Heights, IL 60463
708-371-1111
Principal: Dan McAllister

Annual Bridge Design & Strength Test Contest

Engineering Graphics, Physics, and Math

Chuck Morrison

Program Abstract:

By challenging students using friendly competition between engineering and physics, students at Deerfield High School put their knowledge of math, physics, and design into a real three dimensional solution to a prescribed problem (i.e. The Bridges)! Using basswood, glue, and knowledge, students construct bridges which are then destructively tested, creating an exciting conclusion to the learning experience.

Evaluation:

Integration of academic and vocational curricula occurs when physics students use the Engineering Graphics Lab and are introduced to CAD as a design tool. The engineering students research "forces" via physics principles and, as mentioned previously, they have a bit of friendly competition for bragging rights.

Mr. Morrison mentioned that "For many years I have tried to show the close relationships between my drafting/design curricula and that of math and science. The Deerfield High School Annual Bridge Design and Strength Test does just that."

DHS

Curriculum Area:
Engineering Graphics, Physics, and Math

Level of Implementation:
11-12

Students:

Materials included:

Instructional guidelines, outside resources, student work samples, speakers on bridge design, curriculum guide, assessment tools, audiovisual material, lesson plans, and bibliography

Integration Resources:

Each year the winning student's name and design efficiency are engraved on a plaque. Last years winner broke an existing record, holding 1,616.2 times its own weight.

Contact:

Chuck Morrison
Deerfield High School
1959 Waukegan Road
Deerfield, IL 60015
(708) 405-8470
Principal: John Scornavacco

Business, English, Manufacturing, Math, and Science

JoAnne Westerman

Program Abstract:

By focusing on the alignment of topics covered in academic and vocational courses taken by the middle 50% of the student body at East Peoria Community High School, a lab has been instituted to teach Applied Academics. This lab incorporates applied materials in all sections of pre-algebra, algebra, academic level English (all years), physics, & chemistry/biology, and develops a sequence of recommended academic & vocational courses for students planning to enter a vocational career. The alignment, coordinated by JoAnne Westerman, was accomplished by developing complex flow and organizational charts which allows students to gain exposure to many relevant subject areas.

Evaluation:

Math, science, & manufacturing teachers worked together studying each other's curriculum, noting overlapping topics, and adapting course outlines so that topics were being taught by academic teachers previous to or concurrently with the related vocational unit. Similarly, English, business, and math teachers worked together to align their curricula. Plans were made for vocational & academic teachers to team teach some units during the next school year as scheduling allows.

Academic teachers and vocational teachers worked together for the first time, learning what related material was being covered in other departments. The focus was on making sure students mastered specified basic knowledge before graduation instead of focusing on competition between departments for student enroll
ment.

EPCHS

Curriculum Area:

Business, English, Manufacturing, Math, and Science

Level of Implementation:

9-12

Students:

Average

Materials included:

Curriculum Outlines, and Registration Course Sequences

Integration Resources:

Pre-tests were given in Tech Prep English, math, science, business, and manufacturing classes during Fall, 1991; post-tests were administered in late Spring, 1992. Results from curriculum alignment will be monitored over a two-to-three year period. Test scores from students in classes utilizing the applied math lab & applied materials will be compared to those in traditional classes.

Contact:

JoAnne Westerman
East Peoria Comm. H.S.
1401 E. Washington Street
East Peoria, IL 61611
(309) 694-8300
Principal: Jeanne Williamson

The Pandora Society

Math, Science, and Technology

Cynthia B. Vernon

Program Abstract:

The Pandora Society, developed at Carbondale Community High School, was designed to build female students' interest and skills in math, science, and technology through practical experiences. The Pandora Society was never intended to open a box of evils for the world, but rather a box of positive experiences which will influence young women throughout their adolescent and adult lives. The group meets bi-weekly to develop practical skills which include: using power tools, fixing common household items, decorating skills, general auto repair, etc.

Evaluation:

Students use mathematical and science skills to complete a variety of practical applications successfully. Cynthia Bernon, who started the program, indicated that she began the program after noticing that average and above average female students in chemistry and physics had a disturbing tendency to distrust their ability to handle practical applications of academic material.

CCHS

Curriculum Area:
Math, Science, and Technology

Level of Implementation:
10-12

Students:
Average, Above-Average

Materials included:

Instructional guidelines, outside resources, curriculum guides

Integration Resources:

Measure girls' classroom behavior when called upon to construct laboratory equipment or otherwise link practical experience to academic skill; interviews through questionnaire.

Contact:

Cynthia B. Vernon
Carbondale Community High School200
N. Springer St.
Carbondale, IL 62901
(618) 457-3371
Principal: Russell Clover

Reading Workshop

9th grade English

Shirley Miller

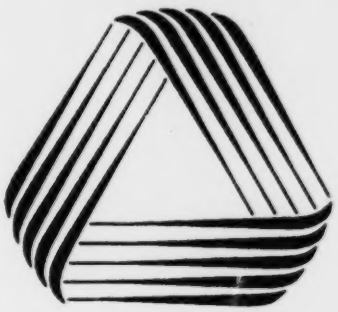
Program Abstract:

Reading, the fundamental component of all learning, has a new opportunity to be emphasized through the work of Shirley Miller at Cambridge High School in Cambridge, IL. Shirley indicated that by giving students the opportunity to read a book of their choice during class time, reading skills progressed and personal reading habits improved.

Evaluation:

Reading is a fundamental skill required in all careers, whether technical or vocational. A varied vocabulary and the ability to read are two major benefits of this program.

This program encourages students to read, thereby developing a desire for recreational reading. Writing skills are enhanced as students respond in their "lit logs." Feedback from students shows a general increase in time spent reading, both academically and recreationally.



CHS

Curriculum Area:
English

Level of Implementation:
9-10

Students:
Below average, Average, Above Average

Materials included:
Instructional Guidelines, Student Work Samples, Assessment Tools

Integration Resources:
A survey was used to evaluate student performance and the students' reading logs were read periodically.

Contact:
Shirley Miller
Cambridge High School
300 South West St.
Cambridge, IL 61238
(309) 937-2051
Principal: Dan Caras

Home Economics & Science

Nancy Holt/Jim Slouf

Program Abstract:

The purpose of the Food Science program at Downers Grove South High School is to give students an opportunity to learn scientific principles similar to those taught in an appropriate level science class and have a chance to apply them in the areas of food preparation and nutrition. The food science curriculum links food preparation techniques, which are an internal part of the vocational food service area, to the underlying scientific principles. As an example, students apply information about the factors influencing crystal growth to candy making.

Evaluation:

When the science requirement for graduation from School District #99 was increased from one credit to two, it was discovered that approximately 80% of the student body took three or more science courses. The remaining students who should be required to take additonal science hours were primarily lower ability students. Nancy Holt indicated that the food science program was developed to meet the needs of those students.

DGSHS

Curriculum Area:
Home Economics & Science

Level of Implementation:
9-12

Students:
Below Average, Average, Above Average, Special Education.

Materials included:
Instructional Guidelines, Outside Resources, Student Work Samples, Curriculum Guides, Assessment Tools, Audiovisual Material, Lesson Plans, Bibliography, Teacher Workshops

Integration Resources:
The director of assessment been involved with the formal assessment of food science final exam scores which will be compared to final exam scores in science courses with a comparable population. School board members, school administrators, department heads, and teachers observed the course on numerous occasions.

Contact:

Nancy Holt/Jim Slouf
Downers Grove South H.S.
1436 Norfolk
Downers Grove, IL 60516
(708) 852-0600, Principal: Dr. Craig Zeck

Capstone Secretarial Course

Vickie Seniker

Program Abstract:

Clerical Office Practice at Gillespie High School is a senior-level course that provides a link between other high school business courses and the real business world. By emphasizing the use of computers (utilizing various integrated software programs), calculators, and transcription machines, students passively receive abstract concepts related to math, science, and English.

Evaluation:

A one-month unit on basic grammar, which relates to material students have already learned in English, serves to "merge" the English Department and the Business Department. The continual pressure to use proper spelling, punctuation, and sentence construction further integrates the two areas.

Vickie Seniker indicated that she could not imagine a business teacher who did not stress the integration of his/her vocational area with the academic area in general and with the language arts program in particular. Vickie further stated: "If one has the keyboarding skills yet lacks proper skills in spelling, grammar, word usage, etc., his/her learning is incomplete."

GHS

Curriculum Area:

Business, English

Level of Implementation:

11-12

Students:

Above Average

Materials included:

There are no textbooks and no workbooks in this class. Various units and sometimes locally created tutorials for various computer units are used for evaluation.

Integration Resources:

One particular measure of the success of Clerical Office Practice (and our entire Business Department) is that when graduates choose to continue their education at a private business school, they find their first several months to be mere review.

Contact:

Vickie Seniker
Gillespie High School
612 Broadway
Gillespie, IL 62033
(217) 839-2114
Principal: Robert Fulton

IVC Tech Prep

English/Business and Math/Science/Industrial Technology

Susan Goodale

Program Abstract:

The Illinois Valley Central High School's inregrated curriculum prepares students for the highly technical, rapidly changing workforce of the 21st century through its integration of academic and technical preparation and the encouragement of college prep studies. A week-by-week integrated curriulum outlines all major concepts to be covered in English, business, math, science, and industrial technology. Lesson plans, daily, and weekly objectives have been developed which reinforce one another, as well as common concepts.

Evaluation:

Overlaping and reinforcement, as well as direct application of academic concepts in two or more curricular areas at one time, encourages students to take planned sequences of integrated instruction. This effort has resulted in increased test scores, lower dropout rate, increased number of students pursuing the 2+2 degree, and more academically and technically prepared students.

IVCHS

Curriculum Area:
English/Business and
Math/Science/Industrial Technology
Level of Implementation:
9-12

Students:
Average, Above Average

Materials included:

Instructional guidelines, outside resources, curriculum guides, audiovisual material, lesson plans, teacher workshops.

Integration Resources:

Pre- and post-testing, classroom observation & evaluation, interview.

Contact:

Susan Goodale
Illinois Valley Central
1300 W. Sycamore
Chillicothe, IL 61523
(309) 274-5481
Principal: Steve Garrison

Professional Writing and Cooperative Vocational Education

Language Arts/Business

Del Goodale/Sherri Heth

Program Abstract:

As a part of the Illinois Central High School integrated curriculum project, the Professional Writing program applies the academic concepts of communication (e.g. reading, writing, speaking, listening) in professional/technical writing to students' cooperative work experience. Through developing week-by-week integrated curriculum outlines which serve to connect language arts and business, Del Goodale and Sherri Heth have truly joined curriculum toward the betterment of both programs. Both programs were analyzed and sequenced in order to emphasize the strengths and reinforce the weaknesses of each.

Evaluation:

English, business, and work skills are integrated through weeklystructured lesson plans between the two classes. One class is taught by a business teacher and the other by the language arts teacher. Some of the initial feedback on the program indicates improved performance on the job, increased motivation and retention, test score improvement, and, most importantly, a holistic approach to instruction and learning in the classroom.

IVCHS

Curriculum Area:
Language Arts/Business

Level of Implementation:
11-12

Students:
Average, Above Average

Materials included:
Instructional guidelines, outside resources, curriculum guides, audiovisual material, lesson plans, teacher workshops, and a list of presentations to other schools.

Integration Resources:
On the job evaluation from employers and co-op supervisor, student work quality, and pre- and post-testing

Contact:
Del Goodale or Sherri Heth
IVC High
1300 W. Sycamore
Chillicothe, IL 61523
(309) 274-5481
Principal: Steve Garrison

Math/Science/Industrial Technology

Bob Prout /Mike Themas/Ralph Scott

Program Abstract:

As a part of the Illinois Central High School integrated curriculum project, the math, science, and industrial technology course integrates and reinforces the principles of math, science, and industrial technology for students at the ninth and tenth grade level. Through the development of week-by-week curriculum outlines, connections are formed between abstract math and science concepts and practical industrial technology exploration.

Evaluation:

Course content, objectives, and activities are reinforced and multiply as students move from one class to another.

Test score improvement, increased retention and application, and a wholistic approach to learning are just a few of the goals for the exciting class.

IVCSH

Curriculum Area:
Math, Science, Industrial Technology

Level of Implementation:
9-10

Students:
Average to Above Average

Materials included:
Instructional guidelines, curriculum guides, and lesson plans.

Integration Resources:
Pre- and post-tests, observations, interviews and self-reports.

Contact:

Bob Prout, Mike Themas, or Ralph Scott
IVC High
1300 W. Sycamore
Chillicothe, IL 61523
(309)274-5481
Principal: Steve Garrison

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Tech Prep: Commerce and Communication

Interdisciplinary

Lona C. Bibbs/Carol A. Sharp

Program Abstract:

Upon entering the front door of Westinghouse High School, you will notice that something very positive is taking place. Integrating academic and vocational curricula while exploring all aspects of commerce and communications has led to a new atmosphere at Westinghouse, an atomsphere of pride and accomplishment. By involving students, parents, teachers, and the private sector, a school of commerce and communication which invloves the study of business, drafting, art, and printing has begun to flourish.

Evaluation:

The program is based on shared planning of curricula between academic and vocational areas and the block scheduling of the students and teachers involved in the program, thus allowing planning time for teachers and extended study time for students.

Students are made more marketable through enhanced vocational skills, and improved test scores serve to show the relevance of academic studies to vocational areas of interest. Improved retention and graduation rates are also expected.

WHS

Curriculum Area:

Interdisciplinary

Level of Implementation:

9-10

Students:

Average

Materials included:

Materials/Facilities: Lesson plans, assessment tools.

Integration Resources:

Nineteen of the school's top 25 students are in the program. Semester assessment of students and their parents are conducted. Degree of involvement and participation are considered, along with the quality of student/teacher relationships.

Contact:

Lona C. Bibbs/Carol A. Sharp
Westinghouse
3301 W. Franklin Blvd.
Chicago, IL 60624
(312)534-6400
Principal: Stanton P. Payne

Introduction to Technology/Applied Technology

Larry Bond/John Dillon

Program Abstract:

The Introduction to Technology Program at Lyons Township High School serves to integrate several academic skills and formats: Cooperative learning emphasized in the building of rockets for applied technology course; use of the scientific method in recording observations during rocket launches; and combined instruction on journal entries by the English Department. Teachers use tutorial centers for peer reviews of writing and computer aided instructions to assist in the final revision of the students' essays. This elevates students' consciousness of decision and evaluation in process of rocket building, pre- and post-firing.

Evaluation:

Science, English, and math teachers were involved in the building and writing components of the program. By adding the Writing-to-Learn Unit, students retain the Rocket Unit information longer. A post-test indicated the retention value of the events in the rocket. Test scores "sky-rocketed."

LTHS

Curriculum Area:
Introduction to Technology/Applied Tech.

Level of Implementation:
9-10

Students:
Average

Materials included:
Lesson plans, bibliography, student work samples, teacher workshops.

Integration Resources:
Student essays and journals were used as a means of measuring learning progress.

Contact:

Larry Bond/John Dillon
Lyons Township High School
100 South Brainard Avenue
La Grange, IL 60525
Principal: Ronald Kalicki

Industrial Technology

Fred Fox

Program Abstract:

The Community Unit School District in Carpentersville has initiated a high school planning process that enables students to plan a four-year program which integrates both vocational and academic courses. A packet was developed that provided students with sample four-year plans. The plans flow according to long-term career plans of the student, whether it be a technical school, community college, four-year college or university, or another endeavor.

Evaluation:

The planning process emphasizes the importance of both vocational and academic preparation during high school. By addressing the need to eliminate the artificial barriers between the vocational and academic courses offered to students, many more options become available.

The planning process allows students to address the importance of integrating both vocational and academic course work into their high school program.

CUSD#300

Curriculum Area:
Industrial Technology

Level of Implementation:
9-14

Students:
Below to above average, special ed.

Materials included:
High School Planning Guide

Integration Resources:
Follow-up studies of students completing the program reflected an increased success rate.

Contact:
Fred Fox
Community Unit School Dist. #300
300 Cleveland Ave.
Carpentersville, IL 60110
(708)426-1300
Principal: Norman Wetzel

Conservation

Gary Swick

Program Abstract:

Dundee-Crown High School has a new curriculum project which serves the learning needs of students and provides a valuablecommunity service. The program involves operating a recycling system that: significantly reduces the waste stream, is cost-effective, reclaims a diversity of materials, and serves as a model to other schools.

Evaluation:

Students apply curriculum concepts concerning action on environmental problems. Students exercise, build skills, and experience problem-solving, management, communication, relations, and ethic development, thus providing an opportunity which allows students to gain valuable experience and develop skills while providing a service to the school community.

DCHS

Curriculum Area:
Conservation

Level of Implementation:
9-12

Students:
Below to above average, special ed.

Materials included:

Photo journal, video tape, teacher workshops, program materials (signs, forms, procedures), display.

Integration Resources:

The indicators of success are emphasized by the comments of fellow faculty who are awed by the over-achievements of "underachievers." The program has reflected pride, reduced waste by nearly 50%, is operating in the black, and is a state model.

Contact:

Gary Swick
Dundee-Crown High School
1500 Kings Road
Carpentersville, IL 60110
(708)426-1467
Principal: James L. Wilbrandt

Publication Project—Junior Class Newspaper

English Composition, Graphic Communications and Information Processing

Anne Wildrick/Paula Chance/Clyde Smith

Program Abstract:

The publication project at The Illinois School for the Deaf is receiving rave reviews from students and parents by allowing students to use their communication, printing, and desktop publishing skills to produce a professional quality publication. The junior class newspaper brings all the students' skills together toward the completion of a common purpose.

Evaluation:

English Composition, Graphic Communications and Information Processing instructors work together to design and coordinate theproject. In the English class, students learn about the newspaper business and use their interviewing, surveying, and written communications skills to develop the text with teacher Paul Chance. Anne Wildrick supervises the desktop publishing, and Clyde Smith helps with the layout, darkroom work, and color printing.

Communication is the most difficult area when working with students who are deaf or hard of hearing. The project allows students to strengthen and apply their visual and written communication skills in a practical and productive manner. The students are proud of what they produce and receive recognition for their efforts from their teachers, peers, and principals.

ISD

Curriculum Area:

English, Graphic Communications

Level of Implementation:

11-12

Students:

Special Ed.

Materials included:

Student work samples.

Integration Resources:

Students are evaluated on the quality of their work, their attitudes and cooperation, and the final product. The quality of the students' work improves with each revision of the paper.

Contact:

Anne Wildrick/Paula Chance/Clyde Smith
Illinois School for the Deaf
125 Webster Avenue
Jacksonville, IL 62650
(217)479-4216
Principals: Phil Dixon/Harry Hall

Applied Physics/Science and Industrial Technology

Russel Lehner/Ann Brandon

Program Abstract:

Integrating physics and practical industrial technology into a course designed for career development with science and vocational education credit was the primary purpose for developing the Applied Physics/Science and Industrial Technology course at Joliet West High School. With modern technology requiring training that is applicable to more than a single job, students who become technicians must understand the principles by which modern equipment operates. Specific principles explored in this course include mechanical, fluid, electrical, and thermal laws.

Evaluation:

Using extensive hands-on lab activities and continuous science and vocational math applications related to the lab activities, the program develops basic physics principles applicable to the real technological world.

The industrial technology area often looks at effects without investigating causes. Science tends to study causes, but only considers effects in the abstract. The integration of physics and technology allows students to develop or combine common goals for each area. They see and feel the causes, they feel and measure the effects of friction, fluid pressure, temperature differences, resistance, and calculate the results of these effects on real systems.

JWHS

Curriculum Area:
Applied Physics/Science and Industrial Technology

Level of Implementation:
11-12

Students:
Average to Above Average

Materials included:

Instructional guidelines, curriculum guides, lesson plans, assessment tools, student work samples, lab data tables, student calendars/study guide, demonstration equipment.

Integration Resources:

Integration Resources: Success has been measured in SICA science contest, IIT bridge building contests, students' gaining employment in industry.

Contact:

Russel Lehner
Ann Brandon
Joliet West High School
401 N. Larkin Ave.
Joliet, IL 60432
(815)727-6950
Principal: Ronald J. O'Brien

Technology Education

Rod Bourne/David Doering

Program Abstract:

The future village board members of Chatham, Illinois, may be enrolled in the technology education program at Glenwood Jr. High School today. The Community Development program combines related activities into a major project that enhances and/or encourages critical thinking, real-world interaction, awareness of technological impacts, hands-on solutions to environmental problems, and application of inter-disciplinary knowledge. Students address real community planning problems in the class and recently designed a new amusement park for the community.

Evaluation:

Skills and concepts from other courses such, as math (measuring bridge efficiencies), social and political science (debates & village board meetings), and science (application of physics, alternative energy resources), are utilized to reinforce concepts in the course.

The technology classroom easily integrates topics and skills from other academic areas. By definition, technology is the application of sciences. However, the opportunity for some fun and enthusiasm during learning adds to the motivation of the student.

GJHS

Curriculum Area:
Technology Education

Level of Implementation:
7th grade

Students:
Below to Above average

Materials included:
Assessment tools, student work samples, audiovisual material, activity design sheets.

Integration Resources:
Testing, student evaluation forms, observation, and feedback from parents, board members, administration, teachers, and community members.

Contact:
Rod Bourne/David Doering
Glenwood Jr. High School
RR 1 Box 66A
Chatham, IL 62629
(217)483-2481
Principal: Rick Taylor

How to Research and Pursue a Career

English/Adult Living

Joanne Schrader/Victoria Landberg

Program Abstract:

Exploration in a variety of careers while not duplicating course content is accomplished at Geneva High School by integrating curriculum and assessment. Students gain an understanding of how clear and correct communication (oral and written) is crucial for procuring and keeping a job. The program focuses on real-world problem solving applications by utilizing the connections between disciplines and reinforcing the communications skills needed for life-long learning.

Evaluation:

Students utilize a 300-page learning packet which includes lesson plans, commercially available audiovisuals, curriculum guides, and assessment tools in order to understand that academic subjects are a fundamental part of every vocation. Although the course has only been implemented for one semester and the evaluation and revision of materials is still in process, the preliminary results are extremely encouraging.

GHS

Curriculum Area:
English, Home Economics

Level of Implementation:
11-12

Students:
Average

Materials included:
Curriculum guides, audiovisual (material, lesson plans.

Integration Resources:
Outside speakers, curriculum and assessment tools.

Contact:
Joanne Schrader/Victoria Landberg
Geneva High School
415 Logan Avenue
Geneva, IL 60134
708-232-7500
Principal: Cray Collum

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